

ARRANGEMENT UTILIZING A MAGNETIC ATTRACTIVE FORCE

TECHNICAL FIELD

The present invention relates generally to an arrangement based in principle on utilising a magnetic attractive force when it becomes operative between two permanently magnetised or magnetic strips.

More specifically the present invention relates to an arrangement enabling edge-to-edge joining or holding together, by means of a magnetic attractive force, of a first edge portion of a first panel in a display system to or against an opposed or second edge portion of a second panel.

The arrangement in accordance with the invention is also based on the principle of a first magnetised strip being applied to said first edge portion and a second magnetised strip being applied to said second edge portion, the edge-oriented magnetised strips being assigned such magnetisation directions that, in a position where the edge portions are in proximity and/or co-operating with each other, they assume a position strongly attracted to each other.

The principle of the invention is also based on said magnetised or magnetic strips consisting of a material or a material composition different from the material or material composition of the panel.

This choice of materials for the strip and for the panel requires the use of a means attaching the strip to the panel, said means being oriented close to said edge portions.

Said attachment means usually consists of an adhesive layer applied on the strip.

The present invention has been developed for the purpose of obtaining an application in a folding display arrangement or a display system comprising several panels.

Such a display arrangement may advantageously comprise of a plurality of base units that can be placed on, attached to or rest against a support surface, a sheet or panel that can be rolled or unrolled and may display a text, and/or pertain to each base unit, and a stand designed to support and retain the sheet or panel.

The expression "sheet or panel" refers primarily to a surface displaying a picture and/or text applied on a screen, a sheet of PVC or paper or other equivalent, thin carrier, the sheet material being so thin and thus flexible that it can be rolled and unrolled without the rolling or unrolling causing disturbing permanent deformation when unrolled to assume the form of a flat sheet or panel.

Only "panel" is used in the following description and this expression shall be understood in the first place to mean a thin sheet, without entirely excluding somewhat thicker and stiffer panels.

The invention also makes reference to a magnetic strip arrangement, which is adapted to co-operate with said panel or similar object in other applications.

BACKGROUND ART

Several different arrangements are already known for joining sheets or panels edge-to-edge in a display system or arrangement by utilising a magnetic attractive force.

Several ways of combining pictures and text having dimensions considerably larger than the dimensions of a single utilised sheet or panel, for the purpose of providing information are already known and, with reference to the present invention, it should be mentioned that it is already

known to join a plurality of such panels edge-to-edge with the aid of magnetised strip arrangements initiating the requisite magnetic attractive forces towards each other.

More specifically it is in this respect known for a first edge portion of a first panel to be detachably joined to a second edge portion of a second panel, a first permanently magnetised strip being applied to said first edge portion and a second permanently magnetised strip being applied to said second edge portion, and the magnetised strips being assigned such magnetisation directions in relation to each other that, in a position where the edge portions are in proximity and/or co-operating with each other, they assume a position firmly attracted to each other, said strips consisting of a composite material different from the material of the panels or the sheets and with the strips attached by means of adhesive to said edge portions of the panel.

In this connection it is known to use a PVC material for the material of the panel, which has a modulus of elasticity of approximately 2600 MPa (megapascal or N/m²) and to use an elastic plastic material for the magnetised strip or magnetic strip (1.7×6 mm), which has a modulus of elasticity of approximately 30–35 MPa.

In this respect the magnetic strips pertaining to the panel are suited for mechanical and magnetic co-operation with rails or support points located behind them which are also assigned permanent magnetisation or a magnetically attracting metal.

In connection with this arrangement it is thus already known to utilise permanently magnetised strips having a thickness dimension lying usually within the range of about 1.5 to 2.0 mm and having a width dimension between approximately 6 and 12 mm.

These permanently magnetised strips may be polarised in sections 1.5 mm wide or may be N-S polarised in the transverse direction.

It is already known that when a panel is to be rolled up, if one or both lengthways edge portions have been provided with magnetised strips of such thickness, the inner rolling radius for the panel must be rather large so that tensile and compressive forces, as well as axial stress related forces in the edge portions of the panel and the magnetised strip and the attachment means used, will not cause such high stresses that plastic deformation occurs or that the attachment means used slips or is released from its attachment to the panel.

It is also obvious that the spiral shape produced when the panel is rolled up acquires a pitch which is at least dependent on the thickness of the strip and of the panel. Thin panels in particular are extremely difficult to handle when fully rolled up since they become heavy at the end or edge due to the weight of the magnetic strips.

It is also known per se that a maximised magnetic attractive force between the edge portions of the panels must be sufficiently strong to cause these edge portions to abut each other tightly even in the event of slight forces being exerted on the exposed surfaces of the panels.

The magnetic attractive force necessary for this is well tested and thus known.

Taking into consideration the specifics associated with the present invention it may also be mentioned that it is known per se to apply relatively thick magnetic strips (e.g. 1.5–2.0 mm) to the laterally oriented edge portions of one or more sheets or panels so that adjacent sheets can be aligned edge-to-edge without, or substantially without any obvious join between the sheets and where the magnetic attractive force is developed between N/S and S/N magnetised mag-